



**CALIFORNIA
ENERGY COMMISSION**



California Energy Commission
Clean Transportation Program

FINAL PROJECT REPORT

Mission College: Energy Transit Apprenticeships

**(California Community College Chancellor's
Office/Assembly Bill 118)**

Prepared for: California Energy Commission

Prepared by: Mission College

December 2021 | CEC-600-2021-047

California Energy Commission

Rob Gamble

Primary Author

Mission College

3000 Mission College Blvd.

Santa Clara, CA 95054

(408) 855-5255

[Mission College Website](http://www.missioncollege.edu) (www.missioncollege.edu)

Contract Number: 600-15-004

Patrick Brecht

Commission Agreement Manager

Charles Smith

Office Manager

TRANSPORTATION POLICY & ANALYSIS OFFICE

Hannon Rasool

Deputy Director

FUELS AND TRANSPORTATION

Drew Bohan

Executive Director

DISCLAIMER

This report was prepared as the result of work sponsored by the California Energy Commission (CEC). It does not necessarily represent the views of the CEC, its employees, or the State of California. The CEC, the State of California, its employees, contractors, and subcontractors make no warrant, express or implied, and assume no legal liability for the information in this report; nor does any party represent that the use of this information will not infringe upon privately owned rights. This report has not been approved or disapproved by the CEC nor has the CEC passed upon the accuracy or adequacy of the information in this report.

ACKNOWLEDGEMENTS

The success of the Professional Transit Apprenticeship program is largely due to the energy and efforts of Steve Jovel and Jamaine Gibson of the Santa Clara Valley Transit Authority, Deb Moy and Sue Yates from Balance Point Strategic Services and the Faculty and Staff of Mission College.

PREFACE

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007) created the Clean Transportation Program. The statute authorizes the California Energy Commission (CEC) to develop and deploy alternative and renewable fuels and advanced transportation technologies to help attain the state's climate change policies. Assembly Bill 8 (Perea, Chapter 401, Statutes of 2013) reauthorizes the Clean Transportation Program through January 1, 2024, and specifies that the CEC allocate up to \$20 million per year (or up to 20 percent of each fiscal year's funds) in funding for hydrogen station development until at least 100 stations are operational.

The Clean Transportation Program has an annual budget of about \$100 million and provides financial support for projects that:

- Reduce California's use and dependence on petroleum transportation fuels and increase the use of alternative and renewable fuels and advanced vehicle technologies.
- Produce sustainable alternative and renewable low-carbon fuels in California.
- Expand alternative fueling infrastructure and fueling stations.
- Improve the efficiency, performance and market viability of alternative light-, medium-, and heavy-duty vehicle technologies.
- Retrofit medium- and heavy-duty on-road and nonroad vehicle fleets to alternative technologies or fuel use.
- Expand the alternative fueling infrastructure available to existing fleets, public transit, and transportation corridors.
- Establish workforce-training programs and conduct public outreach on the benefits of alternative transportation fuels and vehicle technologies.

To be eligible for funding under the Clean Transportation Program, a project must be consistent with the CEC's annual Clean Transportation Program Investment Plan Update. The CEC issued contract 600-15-004, on August 13, 2015 to support the further development of alternative fuels and advanced vehicle technology apprenticeship training programs.

ABSTRACT

The Mission College: Energy Transit Apprenticeship project contract was funded by a \$250,000 contract with the California Community College Chancellor's Office. Funding for this contract was provided by the California Energy Commission in the partnership with the California Workforce Development Board. These monies are being used to institutionalize new California Division of Apprenticeship Standards apprenticeships for the Santa Clara Valley Transportation Authority, with Mission College as the Lead Educational Agency. The contract supports the established Division of Apprenticeship Standards registered apprenticeships for Coach Operator and Service Mechanic. This project supports the enrollment of well over 200 apprentices and established the Mission College Department of Transportation Studies, created 29 Transit Career course leading to two Career and Technical Education Certificates. This contract will run through September 30, 2018.

Keywords: California Community College Chancellor's Office, Santa Clara Valley Transportation Authority

Please use the following citation for this report:

Gamble, Rob. 2021. *Mission College: Energy Transit Apprenticeship*. California Energy Commission. Publication Number: CEC-600-2021-047.

TABLE OF CONTENTS

	Page
Acknowledgements	i
Preface	ii
Abstract	iii
Table of Contents	v
Executive Summary	1
CHAPTER 1: Transit Apprenticeship	3
Nations First	4
Chapter 2: Project Timeline	5
2016	5
2017	6
2018	9
CHAPTER 3: Key Outcomes	11
Glossary	12
APPENDIX A: List of Transit Courses	A-1

EXECUTIVE SUMMARY

The Mission College: Energy Transit Apprenticeship project supports the further development of alternative fuels and advanced vehicle technology apprenticeship training programs. The project supports the creation and delivery of an apprenticeship training model for the Santa Clara Valley Transit Authority to train new workers and provide career pathway options for incumbent workers who wish to move into alternative fuel fleet maintenance and repair positions. The project was supported with \$250,000 from the CEC in partnership with the California Workforce Development Board through and a contract with California Community College Chancellor's Office and Mission College in Santa Clara.

Funding from this contract supports the institutionalization of new California Division of Apprenticeship Standards apprenticeships at the Santa Clara Valley Transportation Authority with Mission College serving as Lead Educational Agency. This "Career Lattice/Ladder" model currently has two prongs:

- For Santa Clara Valley Transit Authority new hires, who enter the Santa Clara Valley Transit Authority Coach Operator apprenticeship program.
- For Santa Clara Valley Transit Authority incumbent workers, who wish to move into alternative fuel fleet maintenance and repair positions through the Santa Clara Valley Transit Authority Service Mechanic apprenticeship program.

Apprentices enrolled in these two programs receive college credit and will receive a community college recognized certificate upon successful completion of the classroom/laboratory portion of their apprenticeship program.

At its completion, in September 2018, to contract along with a California Apprenticeship Initiative Grant will have established Division of Apprenticeship Standards registered apprenticeships for Coach Operator and Service Mechanic, enrolled well over 200 apprentices, established the Mission College Department of Transportation, 29 Transit Career courses and two Career and Technical Education Certificates.

It is important to note that the Transit Apprenticeship for Professional Career Advancement program is the first registered apprenticeship for Couch Operators anywhere in the Nation. The apprenticeship model developed, in part, through this contract is now being considered for adoption by other Transit Agencies in Northern California and is one of the most successful "New and Innovative Apprenticeships" in the California Apprenticeship Initiative.

CHAPTER 1:

Transit Apprenticeship

In late 2015, Mission College and the Santa Clara Valley Transit Authority (VTA) submitted a proposal to the California Community College Chancellor's Office (CCCCO) under the California Apprenticeship Initiative to establish the Transit Apprenticeship for Professional Career Advancement. Mission and VTA had been in discussion for several months prior to the submission of California Apprenticeship Initiative grant on the development of registered apprenticeships for the Transit industry. We arrived at this strategy in response to a number of challenges: the explosive growth of Silicon Valley and pressure that was putting on the transit infrastructure; an ageing workforce and the rapidly increasing technical demands of careers in transit. Mission College was awarded a California Apprenticeship Initiative grant in December of 2015. Two things quickly became apparent, there was far more demand within VTA than we had anticipated and there was interest in the Transit Apprenticeship for Professional Career Advancement model beyond Santa Clara County.

In May of 2016, Mission College was contacted by the CCCCCO with an opportunity to further support the VTA Apprenticeship and the Transit Apprenticeship for Professional Career Advancement model. CCCCCO proposed a \$250,000 contract utilizing fund provided by the CEC in partnership with the California Workforce Development Board, to implement an alternative fuels and advanced vehicle technology apprenticeship training program. The contract would support the apprenticeship training program at VTA to train new workers and provide career pathway options for incumbent workers who wish to move into alternative fuel fleet maintenance and repair positions. The contract would also provide funds to explore the expansion of Transit Apprenticeship for Professional Career Advancement beyond VTA.

The funds provided through this contract have been used to institutionalize a new California Division of Apprenticeship Standards apprenticeship model for the Santa Clara Valley Transportation Authority, with Mission College as the Lead Educational Agency. This "Career Lattice/Ladder" model currently has two prongs:

- For VTA new hires, who enter the VTA Coach Operator apprenticeship program.
- For VTA incumbent workers, who wish to move into alternative fuel fleet maintenance and repair positions through the VTA Service Mechanic apprenticeship program.

Apprentices enrolled in these two programs receive college credit and a community college recognized certificate upon successful completion of the classroom/ laboratory coursework portion of their apprenticeship programs.

The following project plan was developed to institutionalize these apprenticeship programs:

- To build an academic, administrative, and fiscal structure at Mission College to supports the new Transit Apprenticeship program
- To hire and evaluate new Mission College Transit adjunct faculty members in accordance with all Mission and statewide community college standards;
- To research the workforce development needs of Bay Area transit agencies; and to evaluate educational outcomes of the new Transit Apprenticeship program;

- To contract with the VTA to support a new apprenticeship coordinator(s), who will institutionalize and strengthen the new Division of Apprenticeship Standards apprenticeship program;
- To contract with Balance Point Strategic Services to oversee contract activities conducted by Mission, VTA, and community partners; and to institutionalize a “train the trainer” program by creating a resource manual of best practices in building transit apprenticeships with community colleges.

This plan has been in place since July 2016 and at the time of this writing all the major objectives have met (see Chapter 3 for Timeline).

The Nation’s First

It is important to note that the Transit Apprenticeship for Professional Career Advancement program is the first registered apprenticeship for Couch Operators anywhere in the Nation. At its inception, there were no Federal or the State apprentice standards established for Couch Operators, they had to be built from scratch. Mission and VTA worked with both Division of Apprenticeship Standards and the Federal Office of Apprenticeship Standards build and register this apprenticeship. The fact that this is the first apprenticeship for Bus drivers in either public or private transit anywhere in the Country is significant. This apprenticeship model, in part, through this contract, is now being considered for adoption by other Transit Agencies in Northern California. It is also one of the most successful “New and Innovative Apprenticeships” in the California Apprenticeship Initiative.

CHAPTER 2:

Project Accomplishments Timeline

Chapter 2 lists the timeline of accomplishments from the Energy Transit Apprenticeship Program by year.

2016

During 2016, the program was able to begin negotiations for project support, establish workflows and continue conversations about project needs.

June

- Proposal and budget delivered to CCCCCO (6/2/16)
- Outreach to NOVA Workforce Investment Board (6/9/16)
- Proposed Agreement approved by West Valley, Community College District's Board of Trustees (6/21/16)

July

- Established Energy Transit/Assembly Bill 118 with the Mission College Dept. of Workforce & Business engagement
- Began negotiations with Balance Point Strategic Services for project support
- Began negotiations with VTA for Energy Transit/Assembly Bill 118 project

August

- Received agreement R15-0077 from CCCCCO
- Signed (8/9/16)
- Began scheduling meeting with VTA, Amalgamated Transit Union (ATU) NOVA & Sam Trans

September

- Developed contract between Mission College and VTA for \$135,000 to support new apprenticeship coordinator(s), who will institutionalize and strengthen the new Division of Apprenticeship Standards apprenticeship program
- Mission College expanded work to establish the academic, administrative, and fiscal structure at need to support new Transit Apprenticeship programs. This led in part to the establishment of the Mission College Department of Transportation

October

- West Valley, Community College District's Board of Trustees approved the contract with VTA (10/4/16)
- Met with VTA and ATU leadership re: what is needed for supporting apprenticeship programs

- Conducted weekly meetings with new VTA/ATU Coach Operator apprenticeship coordinator and the apprenticeship transition coordinator to establish needs, strategies, protocols, and procedures
- Drafted overview document for workflow between the various partners and agencies involved in apprenticeship programs

November

- Ongoing meeting with VTA and ATU re; Staffing needed to support apprenticeship programs
- Continued weekly meetings with new VTA/ATU Coach Operator apprenticeship coordinator and the apprenticeship transition coordinator to establish needs, strategies, protocols, and procedures
- Met with VTA and ATU re: finalizing document for workflow between the various partners and agencies involved in apprenticeship programs

December

- Continued discussions with VTA and ATU leadership re: what is needed for supporting apprenticeship programs; and staffing requirements?
- Conducted weekly meetings with new VTA/ATU Coach Operator apprenticeship coordinator and the apprenticeship transition coordinator to establish needs, strategies, protocols, and procedures
- Continued discussions with VTA and ATU re: finalizing document for workflow between the various partners and agencies involved in apprenticeship programs

2017

In 2017 the program was able to hire faculty for the project, create enrollment processes and entered agreements with project supporters.

January

- Mission College evaluated and hired Transit adjunct faculty members in accordance with all Mission and statewide community college standards
- Contract between Mission College and VTA was signed by VTA (1/24/17)
- Monthly meeting with VTA and ATU concerning the needs and growth of apprenticeship at VTA and in the Public Transit industry
- Weekly meetings with Coach Operator apprenticeship coordinators
- Continued discussions with VTA and ATU re: finalizing document for workflow between the various partners and agencies involved in apprenticeship programs

February

- Mission College continued to refine the process to enroll and register Transit Apprentices. Issues undertaken, course do not align with tradition semester, the mobile nature of Operators, safety concern limit online options
- Ongoing meetings with VTA and ATU
- VTA dedicated staff to support Transit Apprenticeship in accordance with Mission, VTA contract
- Mission College and Balance Point Strategic Services worked with NOVA to establish their project with VTA and Sam Trans

March

- Monthly meeting with VTA and ATU concerning the needs and growth of apprenticeship at VTA and in the Public Transit industry
- Weekly meetings with Coach Operator apprenticeship coordinators
- VTA staff continued to support the administration and growth of apprentice in accordance with Mission, VTA contract

April

- Monthly meeting with VTA and ATU concerning the needs and growth of apprenticeship at VTA and in the Public Transit industry
- Weekly meetings with Coach Operator apprenticeship coordinators
- VTA staff continued to support the administration and growth of apprentice in accordance with Mission, VTA contract

May

- Monthly meeting with VTA and ATU concerning the needs and growth of apprenticeship at VTA and in the Public Transit industry
- Weekly meetings with Coach Operator apprenticeship coordinators
- VTA staff continued to support the administration and growth of apprentice in accordance with Mission, VTA contract

June

- Mission College developed 2018 agreement with Balance Point Strategic Services
- Mission College Developed new enrollment and registration process to better fit the Transit Apprentices
- Monthly meeting with VTA and ATU concerning the needs and growth of apprenticeship at VTA and in the Public Transit industry
- Weekly meetings with Coach Operator apprenticeship coordinators
- VTA staff continued to support the administration and growth of apprentice in accordance with Mission, VTA contract

July

- Mission College completed and signed 2018 agreement with Balance Point Strategic Services
- Monthly meeting with VTA and ATU concerning the needs and growth of apprenticeship at VTA and in the Public Transit industry
- Weekly meetings with Coach Operator apprenticeship coordinators
- VTA staff continued to support the administration and growth of apprentice in accordance with Mission, VTA contract

August

- Monthly meeting with VTA and ATU concerning the needs and growth of apprenticeship at VTA and in the Public Transit industry
- Weekly meetings with Coach Operator apprenticeship coordinators
- VTA staff continued to support the administration and growth of apprentice in accordance with Mission, VTA contract

September

- Mission College implemented new enrollment and registration process to better fit the Transit Apprentices with 30 new Transit Apprentices
- Monthly meeting with VTA and ATU concerning the needs and growth of apprenticeship at VTA and in the Public Transit industry
- Weekly meetings with Coach Operator apprenticeship coordinators
- VTA staff continued to support the administration and growth of apprentice in accordance with Mission, VTA contract

October

- Monthly meeting with VTA and ATU concerning the needs and growth of apprenticeship at VTA and in the Public Transit industry
- Weekly meetings with Coach Operator apprenticeship coordinators
- VTA staff continued to support the administration and growth of apprentice in accordance with Mission, VTA contract

November

- Ongoing meetings with VTA and ATU apprenticeship coordinators and staff re: Joint Apprenticeship and Training Committee functioning roles and responsibilities and apprenticeship issues
- Weekly meetings with Coach Operator apprenticeship coordinators
- Provide Overview of Transit Apprenticeship program to West Valley Mission Board of Trustee

December

- Ongoing meetings with VTA and ATU apprenticeship coordinators and staff re: Joint Apprenticeship and Training Committee functioning roles and responsibilities and apprenticeship issues

2018

In 2018, the program was able to expand funding, grow the Transit Studies program and create a final report for the CEC.

January

- Worked with Mission College Administration to further establish Transit Studies
- Ongoing meetings with VTA and ATU apprenticeship coordinators and staff re: Joint Apprenticeship and Training Committee functioning roles and responsibilities and apprenticeship issues
- In collaboration with California Transit Works began meetings with Representatives of AC Trans, Golden Gate Transit and the City of Stockton

February

- Work with United States Department of Labor to expand funding available for Transit Apprenticeship at both Mission College and American River College
- Ongoing meetings with VTA and ATU apprenticeship coordinators and staff re: Joint Apprenticeship and Training Committee functioning roles and responsibilities and apprenticeship issues

March

- Worked with NOVA Workforce Investment Board staff to better focus their efforts to support Transit Apprenticeship
- Ongoing meetings with VTA and ATU apprenticeship coordinators and staff re: Joint Apprenticeship and Training Committee functioning roles and responsibilities and apprenticeship issues

April

- Ongoing meetings with VTA and ATU apprenticeship coordinators and staff re: Joint Apprenticeship and Training Committee functioning roles and responsibilities and apprenticeship issues

May

- Ongoing meetings with VTA and ATU apprenticeship coordinators and staff re: Joint Apprenticeship and Training Committee functioning roles and responsibilities and apprenticeship issues

June

- Ongoing meetings with VTA and ATU apprenticeship coordinators and staff re: Joint Apprenticeship and Training Committee functioning roles and responsibilities and apprenticeship issues

July

- Ongoing meetings with VTA and ATU apprenticeship coordinators and staff re: Joint Apprenticeship and Training Committee functioning roles and responsibilities and apprenticeship issues
- Working with VTA Training staff and Mission College began the development of a for-credit Work Experience program

August

- Completed report to CEC
- Completed Work Experience model

September

- Program completed

CHAPTER 3:

Key Outcomes

The Mission College Energy Transit Apprenticeship Program supports the further development of alternative fuels and advanced vehicle technology apprenticeship training programs. Through tasks listed in Chapter 2, the program has been able to accomplish these goals:

- Mission College established The Department of Transportation Studies. The Department offers 29 courses and community college recognized certificate (list of courses in Appendix A).
- Working in partnership with VTA Mission College completed two rounds of Faculty hire.
- Met with representatives from Sam Trans, AC Trans, Golden Gate Transit and the City of Stockton. Mission College is also engaged with the NOVA Workforce Board and California Transit Works to further promote transit apprenticeship.
- Mission College and VTA entered into a contract in January 2017 to support their apprenticeship program.
- Mission College entered into an agreement with Balance Point Strategic Services in July of 2016. Working with Balance Point Strategic Services we have developed additional curriculum, developed a “train the train” program. Mission College and Balance Point Strategic Services have been meeting with Transit Agencies for across Northern California over the last two years. These agencies include Sam Trans, AC Transit, Golden Gate Transit and the Fresno Transit Authority. It is likely that one or more of these agencies will begin the process of establishing apprenticeships in the coming year.

The VTA, Mission College Apprenticeship program is ongoing and during the drafting of this report there were approximately 400 apprentices granted with 210 completed and 190 still in progress. The program hopes to continue to provide alternative fuel and advanced vehicle technology apprenticeship training.

GLOSSARY

AMALMAGATED TRANSIT UNION (ATU)— the largest labor union representing transit and allied workers in the U.S. and Canada.¹

CALIFORNIA COMMUNITY COLLEGES CHANCELLOR’S OFFICE (CCCCO)—committed to students getting the high-quality curriculum, support and instructional services that they deserve. The office and various subdivisions are responsible for providing leadership, oversight and assistance for California’s community college system.²

CALIFORNIA ENERGY COMMISSION (CEC)—The state agency established by the Warren-Alquist State Energy Resources Conservation and Development Act in 1974 (Public Resources Code, Sections 25000 et seq.) responsible for energy policy. The CEC's five major areas of responsibilities are:

1. Forecasting future statewide energy needs.
2. Licensing power plants sufficient to meet those needs.
3. Promoting energy conservation and efficiency measures.
4. Developing renewable and alternative energy resources, including providing assistance to develop clean transportation fuels.
5. Planning for and directing state response to energy emergencies.

Funding for the CEC's activities comes from the Energy Resources Program Account, Federal Petroleum Violation Escrow Account, and other sources.

SANTA CLARA VALLEY TRANSPORT AUTHORITY (VTA)— is an independent special district that provides sustainable, accessible, community-focused transportation options that are innovative, environmentally responsible, and promote the vitality of the region.³

¹ Amalgamated Transit Union- [Our Union](https://www.atu.org/union) (https://www.atu.org/union)

² [California Community College Chancellor’s Office Website](https://www.cccco.edu/About-Us/Chancellors-Office/Divisions) (https://www.cccco.edu/About-Us/Chancellors-Office/Divisions)

³ [Valley Transport Authority About Us](https://www.vta.org/about) (https://www.vta.org/about)

APPENDIX A:

List of Transit Courses

Table A-1 lists the transit courses offered at Mission College.

Table A-1: Mission College Transit Courses

Courses	Units
Introduction to Transit Industry Careers (TRN 010)	1.0 Unit
Foundations of Public Service for Transit Workers (TRN 101)	2.0 Units
Public Service and Stress Management for Public Transit Employees (TRN 102)	1.0 Unit
Community Health Issues for Public Transit Employees (TRN 103)	1.0 Unit
Peer Mentoring for Public Transit Workers: One-On-One Skills (104)	1.0 Unit
Group Facilitation and Training Skills for Peer Mentors (TRN 105)	1.0 Unit
Interpersonal Communication for Transit Workers (TRN 106)	1.0 Unit
Labor/Management Problem Solving in Public Transit (TRN 107)	1.0 Unit
Performance Coaching for Public Transit Leaders (TRN 108)	1.0 Unit
Transit Business Technology and Practices for Transit Employees (TRN 109)	1.0 Unit
Transit Operations for New Leaders (TRN 110)	2.0 Units
Service Mechanic: Orientation & Safety (TRN 201)	2.5 Units
Service Mechanic: Tools & Fasteners (TRN 202)	2.5 Units
Service Mechanic: Electrical/Electronics 1 (TRN 203A)	2.5 Units
Service Mechanic: Electrical/Electronics 2 (TRN 203B)	2.5 Units
Service Mechanic: Air Brakes (TRN 204)	2.5 Units
Service Mechanic: Transmission (TRN 205)	2.5 Units
Service Mechanic: Diesel Engine (TRN 206)	2.5 Units
Service Mechanic: Hybrid Familiarization (TRN 207)	2.5 Units
Service Mechanic: Input/Output Controls (TRN 208)	2.5 Units
Service Mechanic: Preventative Maintenance – PMI (TRN 209)	2.5 Units
Service Mechanic: Overhaul & Repair Orientation (TRN 210)	2.5 Units

Courses	Units
Coach Operator: New Operator Training I (TRN 401)	2.0 Units
Coach Operator: New Operator Training II (TRN 402)	5.0 Units
Coach Operator: New Operator Training III (TRN 403)	1.0 Unit
Coach Operator: New Operator Training IV (TRN 404)	1.0 Unit
Coach Operator: New Operator Training V (TRN 405)	1.0 Unit
Transit Dispatching and Radio Communications (TRN 421)	8.0 Units
Business Technology and Writing for Supervisors (TRN 441)	1.0 Unit

Source: Mission College